Attachment 6
Monitoring, Assessment, and Performance Measures
Rohner Creek Flood Control and Riparian Habitat Improvement Project

The City of Fortuna has identified appropriate performance measures to determine how the project is meeting its intended goals. The continued monitoring of crest gages and continued operation of the flow monitoring station will allow the City to assess the success of the improvements and use that information in the design of future stormwater control projects planned within the City limits. Water quality monitoring is proposed to be SWAMP compatible and other monitoring will be conducted in adherence to state agency (DFG, DWR, SWRCB, etc.) standards. Data collection will occur in site-specific locations appropriate to measure relevant scientifically established variables. Some performance measures are straightforward and relate to short-term goals for the implementation of the project. Other performance measures extend beyond the life of the grant and include monitoring of vegetation to ensure the planted riparian habitat areas are meeting the success criteria identified in the re-vegetation plan.

Project Goals	Desired Outcomes	Output Indicators	Outcome Indicators	Measurement Tools and Methods	Targets
Develop Existing Condition Rohner Creek Model	Evaluation of reliability options	Completion of Draft Rohner Creek Preliminary Flood Control Study	Study narrows down feasible solutions and identifies additional data needed to calibrate models and develop more comprehensive alternatives.	-Preliminary alternative feasibility assessed and data gaps identified -Rohner Creek Existing Conditions Model Calibrated	- Draft Flood Control Study (Completed July, 2009) - Define Conceptual Alternatives for review and selection by June 2011

Project Goals	Desired Outcomes	Output Indicators	Outcome Indicators	Measurement Tools and Methods	Targets
Select Apparent Best Alternative for Implementation	Alternative selected based on City criteria including ability to permit, convey 10-year storm, and cost-effective	City Council and public approval of selected alternative	Development of feasible alternatives that reduce flood damage and enhance public benefit	-Stormwater Control and Riparian Habitat Project Conceptual Layout Report	- Complete Selection of Apparent Best Alternative by October 2011 -Complete environmental constraints analysis by December 2011
Project Documentation	Compilation of key photos for pre-project through project completion	Photos taken at key steps in project including pre-construction photos	Categorized, named, and photos saved to electronic project folder.	Minimum one photo / key steps: -pre-project -site prep -channel improvements -project completion -revegetation	Project documentation completed by March 2014
Preliminary Design	Elevation, soils, and ground stability data, and 30% design	100% Completion of field studies and calculations and completion of geotechnical report in support of 30% design	Geotechnical report certified by a licensed engineering geologist, completed site survey stamped by a licensed surveyor, Concept design for agency approval	-Studies conform to applicable standards -Comments obtained from regulatory agencies and City staff	Final geotechnical study stamped by licensed professional, complete site survey, and preliminary Design (30%) by March 2012
Reduce potential for seismic event related change in flood damages	Four Rohner Creek Bridge crossings that meet current seismic standards	Creek crossing design that meets 2007 California Building code seismic provisions		Design Plans stamped by a licensed California Licensed Civil Engineer	Increase level of seismic protection from 1960 standards to 2007 standards

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Improve water quality in Rohner Creek and the downstream waterbodies	Sediment load reduction	Channel improvements designed to reduce bank erosion and vegetation layout designed to capture sediment flowing from the upper watershed		Pre-Project, during project, and post-project Rohner Creek turbidity and total suspended solids (TSS) monitoring	Reduction of 10% in sediments loads as measured by TSS between the pre- and post- project monitoring events
Increase diversity and complexity of instream habitat suitable for salmonids and other wildlife	Increase in the amount of suitable habitat for salmonids and other wildlife in the project reach of Rohner Creek	- Area cleared of invasive species - Number of native riparian plants planted - Number of acres of riparian habitat restored	- Percent native riparian plant species cover vs. invasive species cover	CDFG California Salmonid Stream Habitat Restoration Manual, Section 11	Final targets determined during environmental permitting process and during the development of the Revegetation Planting and Monitoring Plan (Work Plan Task 15)
Contain the 10-year recurrence flood in the Rohner Creek Channel	No flood damage from the 10-year recurrence event	Increase in stormwater conveyance up to 10-year event	Project design based on HEC-RAS model results, which show ability of improvement project to contain the 10-year storm recurrence event	-Continued monitoring of crest gages -Continued operation of flow monitoring station on Rohner Creek	Continued flow monitoring for 5 years after the project to compare the predicted post-project performance to the actual post-project performance